



US005713105A

United States Patent [19]**Toomey**[11] **Patent Number:** **5,713,105**[45] **Date of Patent:** **Feb. 3, 1998**[54] **ADJUSTABLE HINGE**[75] Inventor: **Mark H. Toomey, Moline, Ill.**[73] Assignee: **Lawrence Brothers Inc., Sterling, Ill.**[21] Appl. No.: **717,270**[22] Filed: **Sep. 20, 1996**[51] Int. Cl.⁶ **E05D 7/04**[52] U.S. Cl. **16/245; 16/238**[58] Field of Search **16/243, 245-248, 16/235-238, 382, 387, DIG. 43, DIG. 39**[56] **References Cited****U.S. PATENT DOCUMENTS**

375,038	12/1887	Wright	1/246
982,160	1/1911	Regan	.
1,125,177	1/1915	Rixson	.
2,302,484	11/1942	Werner	.
2,373,955	4/1945	Fuller	16/238
2,657,421	11/1953	Polson	.
3,007,193	11/1961	Hughes et al.	.
3,805,324	4/1974	Johnson	.
3,965,532	6/1976	Wigfall	16/270
4,159,557	7/1979	Pittasch et al.	.
4,493,129	1/1985	Grass	.
4,748,717	6/1988	Osborne	.
4,825,507	5/1989	Killingstad	.
5,052,077	10/1991	Lautenschlager et al.	16/238
5,339,493	8/1994	MacIntyre	.

FOREIGN PATENT DOCUMENTS

3-39581	2/1991	Japan	16/243
2032994	5/1980	United Kingdom	16/237

Primary Examiner—Chuck Mah*Attorney, Agent, or Firm*—Trexler, Bushnell, Giangiorgi & Blackstone, Ltd.[57] **ABSTRACT**

A vertically adjustable hinge which permits easy, small and precise vertical adjustments. The hinge includes a body, a first leaf and a second leaf. It should be noted that the hinge may be provided only as a body and a first leaf for retrofitting on to an existing second leaf. The body includes a leaf cavity, an adjustment mechanism cavity and, where necessary, a window. The window extends from a face side of the body and communicates with the adjustment mechanism cavity. The adjustment mechanism cavity communicates with the leaf cavity. The leaf cavity is sized and dimensioned to receive a planer portion of the first leaf therein with additional space for vertical adjustment of the first leaf. An adjustment mechanism is provided in the form of an elongated jack screw having a head which engages a slot formed in the first leaf and a threaded portion which engages a fixed thread. In another embodiment the adjustment mechanism is arranged with the head engaged with the body and the fixed thread disposed relative to the first leaf. In both embodiments, the adjustment mechanism is disposed in the adjustment mechanism cavity. A drive portion is provided on the adjustment mechanism of both embodiments to allow rotary movement of the adjustment mechanism to produce vertical displacement thereof.

25 Claims, 3 Drawing Sheets